

INCH POUND
MIL-M-38510/765
AMENDMENT 2
15 June 1998
SUPERSEDING
AMENDMENT 1
26 March 1998

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, ADVANCED CMOS, SHIFT REGISTERS, MONOLITHIC SILICON, POSITIVE LOGIC

Inactive for new design after 9 August 1996

This amendment forms a part of MIL-M-38510/765, dated 25 February 1991,
and is approved for use by all Departments and Agencies of the Department of Defense.

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Table I, high level output voltage, V_{OH3} , device type column, RHA levels M, D, and R; add "06".

Table I, high level output voltage, V_{OH3} , -55°C/+25°C limits, min column, RHA levels M, D, and R; add "5.4".

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Table I, high level output voltage, V_{OH5} , device type column, RHA levels M, D, and R; add "06".

Table I, high level output voltage, V_{OH5} , -55°C/+25°C limits min column, RHA levels M, D, and R; add "3.7".

Table I, high level output voltage, V_{OH7} , device type column, RHA levels M, D, and R; add "06".

Table I, high level output voltage, V_{OH7} , -55°C/+25°C limits min column, RHA levels M, D, and R; add "3.85".

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Table I, low level output voltage, V_{OL3} , device type column, RHA levels M, D, and R; add "06".

Table I, low level output voltage, V_{OL3} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "0.1".

Table I, low level output voltage, V_{OL5} , device type column, RHA levels M, D, and R; add "06".

Table I, low level output voltage, V_{OL5} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "0.4".

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Table I, low level output voltage, V_{OL7} , device type column, RHA levels M, D, and R; add "06".

Table I, low level output voltage, V_{OL7} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "1.65".

Table I, positive input clamp voltage, V_{IC+} , device type column, RHA levels M, D, and R; add "06".

Table I, positive input clamp voltage, V_{IC+} , -55°C/+25°C limits min column, RHA levels M, D, and R; add "0.4".

Table I, positive input clamp voltage, V_{IC+} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "1.5".

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Table I, negative input clamp voltage, V_{IC-} , device type column, RHA levels M, D, and R; add "06".

Table I, negative input clamp voltage, V_{IC-} , -55°C/+25°C limits min column, RHA levels M, D, and R; add "-0.4".

Table I, negative input clamp voltage, V_{IC-} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "-1.5".

Table I, input current low, I_{IL} , device type column, RHA levels M, D, and R; add "06".

Table I, input current low, I_{IL} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "-0.1".

Table I, input current high, I_{IH} , device type column, RHA levels M, D, and R; add "06".

Table I, input current high, I_{IH} , -55°C/+25°C limits max column, RHA levels M, D, and R; add "0.1".

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- Table I, supply current quiescent, I_{CC} , device type column, RHA levels M, D, and R; add "06".
 Table I, supply current quiescent, I_{CC} , $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA level M; add "25".
 Table I, supply current quiescent, I_{CC} , $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA level D; add "200".
 Table I, supply current quiescent, I_{CC} , $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA level R; add "700".
 Table I, three-state output leakage current low, I_{OZL} , device type column, RHA levels M, D, and R; add "06".
 *Table I, three-state output leakage current low, I_{OZL} , $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA levels M, D, and R; delete "-0.6" and substitute "-25.0".
 Table I, three-state output leakage current high, I_{OZH} , device type column, RHA levels M, D, and R; add "06".
 *Table I, three-state output leakage current high, I_{OZH} , $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA levels M, D, and R; delete "+0.6" and substitute "+25.0".

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- Table I, power dissipation capacitance, C_{PD} , $-55^{\circ}C/+25^{\circ}C$ limits max column; delete "190" and replace with "250".

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- Table I, truth table test, delete and replace with the following:

Test	Symbol	Test conditions, unless otherwise specified <u>1/</u>		Device type <u>2/</u>	V_{CC}	Group A subgroups (test method)	$-55^{\circ}C/+25^{\circ}C$ limits		$+125^{\circ}C$ limits		Unit	
		Min	Max				Min <u>3/</u>	Max <u>3/</u>				
Truth table test	<u>12/</u>	$V_{IL} = .45\text{ V}$	M	06	3.0 V	7 (3014) <u>5/</u>	L	H				
		$V_{IH} = 2.5\text{ V}$					L	H				
		Verify output V_O	R				L	H				
		$V_{IL} = .6\text{ V}$	All	All	4.5 V	7, 8 (3014)	L	H	L	H		
$V_{IH} = 3.7\text{ V}$												
Verify output V_O												

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 3.0\text{ V}$, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 3.0\text{ V}$, $-55^{\circ}C/+25^{\circ}C$ limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 3.0\text{ V}$, $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA levels M, D, and R; add "23.0".

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 4.5\text{ V}$, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 4.5\text{ V}$, $-55^{\circ}C/+25^{\circ}C$ limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, CLK to I/On, t_{PHL1} , t_{PLH1} , $V_{CC} = 4.5\text{ V}$, $-55^{\circ}C/+25^{\circ}C$ limits max column, RHA levels M, D, and R; add "16.0".

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Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 3.0$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 3.0$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 3.0$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "21.5".

Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 4.5$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 4.5$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, CLK to Q0, CLK to Q7, t_{PHL2} , t_{PLH2} , $V_{CC} = 4.5$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "14.5".

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Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 3.0$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 3.0$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 3.0$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "22.5".

Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 4.5$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 4.5$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, \overline{MR} to Q0, \overline{MR} to Q7, t_{PHL3} , $V_{CC} = 4.5$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "15.5".

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Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 3.0$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 3.0$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 3.0$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "21.5".

Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 4.5$ V, device type column, RHA levels M, D, and R; add "06".

Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 4.5$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, propagation delay time, \overline{MR} to I/0n, t_{PHL4} , $V_{CC} = 4.5$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "15.0".

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Table I, output enable time, \overline{OEn} to I/On, t_{PZH1} , t_{PZL1} , $V_{CC} = 3.0$ V, device type column, RHA levels M, D, and R; add "06".

Table I, output enable time, \overline{OEn} to I/On, t_{PZH1} , t_{PZL1} , $V_{CC} = 3.0$ V, -55°C/+25°C limits min column, RHA levels M, D, and R; add "1.0".

Table I, output enable time, \overline{OEn} to I/On, t_{PZH1} , t_{PZL1} , $V_{CC} = 3.0$ V, -55°C/+25°C limits max column, RHA levels M, D, and R; add "19.5".

Table I, output enable time, \overline{OEn} to I/On, t_{PZH1} , t_{PZL1} , $V_{CC} = 4.5$ V, device type column, RHA levels M, D, and R; add "06".

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Table I, output enable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 4.5$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits min column, RHA levels M, D, and R; add "1.0".

Table I, output enable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 4.5$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits max column, RHA levels M, D, and R; add "13.0".

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*Table I, output enable time, $S_0=S_1=H$ to I/On, symbol column, delete " t_{PHZ} , t_{PLZ} " and replace with " t_{PHZ2} , t_{PLZ2} ".

*Table I, output enable time, $S_0=S_1=H$ to I/On, t_{PHZ2} , t_{PLZ2} , $V_{CC} = 3.0$ V, test conditions column, delete "15/" and replace with "4/".

*Table I, output enable time, $S_0=S_1=H$ to I/On, t_{PHZ2} , t_{PLZ2} , $V_{CC} = 4.5$ V, test conditions column, delete "15/" and replace with "4/".

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*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 3.0$ V, device type column, RHA levels M, D, and R; add "06".

*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 3.0$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits min column, RHA levels M, D, and R; add "1.0".

*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 3.0$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits max column, RHA levels M, D, and R; add "19.0".

*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 4.5$ V, device type column, RHA levels M, D, and R; add "06".

*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 4.5$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits min column, RHA levels M, D, and R; add "1.0".

*Table I, output disable time, OEn to I/On, t_{PHZ1} , t_{PLZ1} , $V_{CC} = 4.5$ V, $-55^{\circ}\text{C}/+25^{\circ}\text{C}$ limits max column, RHA levels M, D, and R; add "14.0".

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*Table I, output disable time, $S_0=S_1=H$ to I/On, t_{PHZ2} , t_{PLZ2} , $V_{CC} = 3.0$ V, test conditions column, delete "15/" and replace with "4/".

*Table I, output disable time, $S_0=S_1=H$ to I/On, t_{PHZ2} , t_{PLZ2} , $V_{CC} = 4.5$ V, test conditions column, delete "15/" and replace with "4/".

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Delete "15/ Measured only for initial test and after process or design changes which may affect this parameter."

*The margins of this amendment are marked with an asterisk to indicate where changes from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

CONCLUDING MATERIAL

Custodians:

Army - CR

Navy - EC

Air Force - 17

NASA - NA

Preparing activity:

DLA - CC

Review activities:

Navy - OS, TD, AS, CG, MC, SH

Army - AR, MI, SM

Air Force - 19, 85, 99

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